Cave Swallows
Supplement 4.4

## Dichotomous Key to Common Northern Chihuahuan Desert Mammals

Select one photo or illustration of one of the following area mammals: Mexican free-tailed bat, striped skunk, gray fox, coyote, mountain lion, rock squirrel, porcupine or mule deer.

To use this key, read the two opposing characters (couplet) and go to the numbered item on the right. Continue until you reach the name of the animal.

| | | | |
|---|---|---|---|
| 1 | Forelimbs modified with large somewhat translucent membranes extending to fingertips | Mexican free-tailed bat | |
| 1 | Not as above | | 2 |
| 2 | Tail large and bushy | | 3 |
| 2 | Tail small, slender or otherwise modified, not large and bushy | | 6 |
| 3 | Overall color of fur with black and white longitudinal stripes | Striped Skunk | |
| 3 | Fur color varying, but not solid black and white | | 4 |
| 4 | Grinding teeth as in rodents, overall gray color | Rock Squirrel | |
| 4 | Carnivorous teeth, small dog size or larger | | 5 |
| 5 | Smaller, fur color largely various shades of gray, red and brown, black around mouth | Gray Fox | |
| 5 | Larger, overall color grays and browns, no obvious black area around mouth | Coyote | |
| 6 | Large, long, slender tail, short fur | Mountain Lion | |
| 6 | Tail small, not as above | | 7 |
| 7 | Short fur, large ears, long slender legs | Mule Deer | |
| 7 | Fur modified into spines, small rounded ears and short stocky legs | Porcupine | |

Cave Swallows
Supplement 4.5

# Birdwatching Guidelines

Students involved in the Chihuahuan Desert Lab will have the opportunity, not only to be a part of the banding operations, but also to observe birds for identification purposes and to note their social behaviors. In order not to disturb various habitats, students observing birds at the Rattlesnake Springs Unit of Carlsbad Caverns National Park must remain in the established observation area and NOT in the wet areas. If nests or nest building behaviors are observed, students will allow a minimum of 40 feet to minimize disturbance to the birds.

## Birdwatching Tips

Some basic equipment will make observation much more interesting and rewarding. You will need a good field guide. Take along a small notepad with a pencil for recording what you see, the date and the location. A good pair of binoculars will make identification of birds easier while increasing your enjoyment of the birds. The binoculars you choose should provide a single, bright, clear image of the object you are observing. Binoculars are labeled by their magnification power and the diameter of their objective lenses (front lenses). Two popular types for observing birds are 7 x 35mm and 8 x 40mm.

Often, the best time for observing birds is sunrise through mid-morning.

Paying attention to your appearance and the noises you make will help you spot elusive birds. Remember, birds' senses are much sharper than yours, and some birds are wary of people. Wear clothing that blends in with the surroundings. Avoid bright colors and wear clothing that you can move in silently. Avoid making sudden movements or noises. Be still and quiet as much as possible.

If you know what to look for, you will be able to describe birds more precisely. As you observe a bird, there are several questions to keep in mind. What size and shape is its body? What do its tail, head and bill look like? Can you see any distinctive patterns of color? Observe its activities. Does it flick its tail as it perches? Does it run down the tree trunk or climb up it? Does it feed on the ground? What does its song sound like?

An accurate description enables others to identify the bird and will also remind you later of what you saw. To accurately describe a bird for identification, you should know the terms for the parts of the bird and other characteristics that may vary from bird to bird. Note the variations in color and design of the head, bill, body, wings, tail, legs and feet.

Many birds may be identified by one or two unique characteristics, such as its crest and color. The habitat of a bird, its body size and shape, and the design of its wings, feet and bill provide valuable clues for bird identification.

You can learn to recognize many birds by their body size and shape. When you see a bird, first determine its size. From a distance, size may be misleading. Compare the bird to an object, such as a flower or branch, that is near it in order to get an accurate idea of its size. Generally, younger birds are smaller than older birds and females are smaller than males. However, female birds of prey are generally larger than males.

Notice the shape of the bird's body. Some are plump; others are more slender. Males and females may have slightly different shapes.

Birds have different bill shapes for the kinds of food that they enjoy. Many birds are herbivores, eating only plants and plant parts. Seed-eating birds have short, stout bills for cracking hard seeds. Nectar-eating birds have long, delicate probing bills. Birds of prey have beaks, bills with sharp mandibles for tearing flesh. The upper mandible extends beyond the lower mandible and hooks downward in front of it. Omnivores have a wide variety of bills.

What type of feet does the bird have – Perching feet? Scratching feet? Climbing feet? Running feet? Swimming feet? Wading feet?

Soaring birds have broad wings with primary flight feathers spread far apart. Forest birds generally have stubby broad wings for quick acceleration in close quarters. Birds that spend most of their time gliding over water have long, narrow wings. Birds that are fast, agile fliers have powerful, tapered wings.

Like that of a bird's wings, the shape of a bird's tail determines the type of flight and habitat conditions for which the bird is designed. Many woodland birds have relatively long, narrow tails for quick maneuvering between trees and other obstacles in the forest. Flapping birds of more open habitats, have shorter, wider tails. Soaring land birds have large, fanlike tails for extra lift and control in thermals. Aquatic birds have smaller tails.

Generally, males and females of the same species do not look alike. Normally the male is more colorful than the female. A male has bright colors in order to attract a mate and to distract predators from finding its mate and nest. The female has less coloring in order to blend into the background as she sits on her nest. Also colors change according to season, and a young bird may have different coloring from an adult.

When observing birds, go beyond physical identification and observe their behaviors. Study their audible and visual communications. Observe their actions – bathing, dusting, anting, mobbing, fighting, rodent running and outsmarting the foe . Track their migrations.

Most birds can use their syrinx to call, or make short, characteristic noises with their voices. Some birds sing as well as call. Normally, only a male bird sings. Each bird sings from a favorite tree or bush and returns to this singing perch often.

Head bobbing and tail flicking are sometimes warnings of approaching danger.  When a bird raises its crest, it is asserting its dominance.  A bird with its wings spread and its head and bill up is expressing displeasure at a rival entering its territory.  A bird with its head thrust forward, mouth open and wings drooping, is in a threatening pose, ready to defend its territory.  Some birds, on the defensive, will fluff their feathers out to make themselves appear larger.

Enjoy your observations!